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ABSTRACT

This study investigated the measurement integrity of the "Heart Smart" cognitive tests. Designed for fourth, fifth, and sixth graders, the tests measure health-related knowledge involving physiology, nutrition, exercise, and behavioral skills. The report presents tables of specifications, test floors and ranges, a demographic profile of the sample, item analyses, and test reliability analyses. Also reported are analyses investigating the generalizability of results to national samples. Results generally support a conclusion that the measures have psychometric integrity. The "Heart Smart" Cognitive Tests are appended. (Author/TJH)

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Measuring knowledge of children regarding health: Preliminary technical reports for the "Heart Smart" tests.

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ABSTRACT

The study investigated the measurement integrity of the "Heart Smart" cognitive tests. Tests for fourth-, fifth-, and sixth-graders measure health-related knowledge involving physiology, nutrition, exercise, and behavior skills. The report presents tables of specifications, test floors and ranges, a demographic profile of the sample, item analyses, and test reliability analyses. Also reported are analyses investigating the generalizability of results to national samples. Results generally support a conclusion that the measures have psychometric integrity.

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Measuring knowledge of children regarding health: Preliminary technical reports for the "Heart Smart" tests.

Cardiovascular disease remains the nation's number one killer and efforts to lower cardiovascular risk factors are integral to the national health objectives for the 1990s (Butcher et al., in press). The "Heart Smart" school intervention program was designed to assist in efforts to lower long-term cardiovascular risk factors. The "Heart Smart" intervention is designed for implementation in the elementary school grades and targets the entire school with intervention components including curriculum, nutrition, and exercise. The basic features of the intervention model have been described in detail elsewhere (Downey et al., in press-a, in press-b; in press-c; Johnson et al., in press-a, in press-b).

Of course, ability to evaluate the impacts of any intervention presumes the ability to reliably and validly measure outcomes. The psychometric integrity of various "Heart Smart" non-cognitive outcome measures has been established (cf. Thompson, Butcher & Berenson, 1987). The present study reports detailed efforts to investigate the integrity of the cognitive tests that measure changes introduced through curriculum intervention in grades four through six.

The "Heart Smart" cognitive tests measure knowledge presented to upper elementary school children through 35 to 40 hours of curriculum intervention typically presented to students during science classes. The tests are presented in Appendix A.

Face Validity of the Measures

The usefulness of the tests as intervention measures presumes at the very least that the tests reflect the content of each grade's curriculum. In order to insure this fidelity, during development activities the tests were continually revised by an interdisciplinary test-development team to reflect emphases in the different "Heart Smart" curricula.

Table 1 presents the table of specifications for each of the three tests. Items are categorized according to the content measured, i.e., Physiology, Nutrition, Exercise, and Behavior Skills. Of course, some of the classifications are somewhat arbitrary, e.g., items testing knowledge related to effects of salt were generally classified as Physiological items unless the items tested knowledge regarding Nutrition sources of salt. Nevertheless, Table 1 does give a broad picture of the emphases of the tests and of the curricula to which the tests are matched.

Table 1
Tables of Specifications

	Grade 4				Grade 5				Grade 6			
Item	Phys	Nutr	Exer	Beha	Phys	Nutr	Exer	Beha	Phys	Nutr	Exer	Beha
1	1					1			1			
2	1				1				1			
3	1					1					1	
4	1					1					1	
5	1					1					1	
6	1				1							1
7	1					1				1		
8	1				1				1			
9		1			1					1		
10			1				1			1		
11		1					1		1			
12		1					1			1		
13		1					1		1			
14		1					1					1
15		1			1							1
16		1					1					1
17		1				1			1			
18		1			1				1			
19		1				1			1			
20		1						1		1		
21	1					1				1		
22		1						1		1		
23				1		1			1			
24				1	1					1		
25				1		1						1
26				1		1				1		
27		1			1							1
28				1	1				1			
29		1			1						1	
30		1			1						1	
31		1				1					1	
32		1						1			1	
33		1						1			1	
34				1	1						1	
35		1			1				1			
36				1	1						1	
37				1		1					1	
38			1			1			1			
39			1				1				1	
40			1				1			1		
41			1				1			1		
42			1				1			1		
43			1				1			1		
44			1				1			1		
45			1				1		1			
46			1		1							1
47			1			1			1			
48	1							1	1			
49	1					1			1			
50	1				1					1		

Table 1 (continued)

	Grade 4				Grade 5				Grade 6			
Item	Phys	Nutr	Exer	Beha	Phys	Nutr	Exer	Beha	Phys	Nutr	Exer	Beha
51	1							1	1			
52	1				1					1		
53												1
54									1			
55											1	
56									1			
57									1			
Total	14	19	11	8	17	16	13	6	20	16	13	8
	27%	37%	21%	15%	33%	31%	25%	12%	38%	31%	25%	15%
				52				52				57

As noted in Table 1, the three tests consist, respectively, of 52, 52, and 57 multiple choice items. However, when a test format is in a "selection" format (e.g., multiple choice) rather than in a "supply" format (e.g., essay), the "true length" of the test is actually less than the number of items. The "true floor" of the test is the expected score if the student simply guessed the answer for every item, e.g., the student took the test without access to the test booklet, or could not read the questions. The "true floor" is a function of the number of alternatives per selection item. For example, the "true floor" is 50 on a 100-item true-false test (100/2 choices). The "true floor" of a test with 48 four-choice items and four five-choice items would be 12.80 (48/4 + 4/5). Table 2 presents the "true" floors and lengths of each of the three "Heart Smart" tests.

Table 2
"True" Test Floors and Ranges

Grade	$\underline{v}$	$\underline{v}$ with 4 Choices	$\underline{v}$ with 5 Choices	Test Floor	True Range
4	52	48	4	12.00+0.80 = 12.80	39.20
5	52	45	7	11.25+1.40 = 12.65	39.35
6	57	55	2	13.75+0.40 = 14.15	42.85

Demographic Characteristics of the Sample

Some efforts to establish measurement integrity of cognitive tests require actual data on item performance. In the present study these data were collected on both a pretest and a posttest basis during the 1986-87 academic year from students in an urban school in the southern United States. Table 3 presents a demographic profile of these students.

Table 3
Sample Profile

Grade 4	Pre		Post	
	n	%	n	%
Sex				
Male	93	51.7%	94	54.0%
Female	87	48.3%	80	46.0%
Total	180		174	
Race				
White	127	70.6%	125	71.8%
Black	42	23.3%	38	21.8%
Other	11	6.1%	11	6.3%
Total	180		174	

Grade 5	Pre		Post	
	n	%	n	%
Sex				
Male	100	46.5%	81	48.2%
Female	115	53.5%	87	51.8%
Total	215		168	
Race				
White	136	63.3%	109	64.9%
Black	57	26.5%	43	25.6%
Other	22	10.2%	16	9.5%
Total	215		168	

Grade 6	Pre		Post	
	n	%	n	%
Sex				
Male	81	49.1%	90	54.2%
Female	84	50.9%	76	45.8%
Total	165		166	
Race				
White	107	64.8%	104	62.7%
Black	41	24.8%	44	26.5%
Other	17	10.3%	18	10.8%
Total	165		166	

Three Aspects of Item Analysis

Efforts to establish measurement integrity through the evaluation of individual item performance typically consider three factors: (a) item distractor attractiveness, (b) item difficulty, and (c) item discrimination. As Gay (1980, p. 264) explains,

> the two major aspects of traditional item analysis are determination of degree of item difficulty (the percentage of students who got the item correct) and discriminating power (the degree to which the item discriminates between students who scored high on the total test and those who did poorly). The third aspect of item analysis... is analysis of distractors. In a multiple-choice test, for example, if no one chooses alternative D of item 4, it is a poor distractor, apparently not a plausible response even for students who did not know the correct response.

With respect to item difficulty, generally it is helpful if

> the percentage of students who correctly answer the item is halfway between the percentage expected to correctly answer if pure guessing governed responses and the percentage (100%) who would correctly answer if everyone knew the answer. For example, on a four-alternative multiple-choice item,... the value halfway between this [floor] percentage and 100% would be 62.5% (25% + ((100% - 25%)/2)). (Thompson & Levitov, 1985, pp. 164-165)

Item discrimination coefficients are correlation coefficients between students' item scores (i.e., "0" or "1") and the students' total test scores (e.g., 45 out of 52, 50 out of 52). Coefficients approaching +1.0 indicate that students who correctly answered an item tended to do better generally on the full test. As Thompson and Levitov (1985, p. 165) explain, "Items with coefficients near or below zero should be carefully evaluated to determine why the items are performing in a counterintuitive manner. For example, the key may be incorrect or brighter students may be reading something into the item."

However, item performance must be evaluated on a profile basis, since the three aspects of item performance are related. For example, an item with an unfavorable discrimination coefficient (e.g., $\underline{r} = -0.02$) may have an unfavorable difficulty value (e.g., 93.1%). Such a profile would indicate that the wrong types of students are missing the item, but the real problem is that too few students miss the item.

It must be emphasized also that good evaluation practice honors exceptions to these general principles. For example, an

item may be so important in a curr
retained in a test even though alm
to get the item correct and actuall

Tables 4, 5, and 6 present
the three "Heart Smart" tests. Fo
presented for data collected on a
1986. Results are then presented
the Spring, 1987. Choices keyed
asterisks.

Perusal of the tables suggest
perform as expected. Almost all
responses. Some items are somewhat
too hard, but generally the it
reasonable. The item discrimination
important, and these coefficient
test items behave appropriately. T
are comparable to those typicall
measures.

a curriculum that the item would be
ugh almost all students are expected
actually do get the item correct.

esent the relevant item analyses for
ts. For each item results are first
ed on a pretest basis in the Fall,
sented for a posttest administered in
keyed correct are designated with

suggests that the measures generally
st all distractors "attract" some
omewhat too easy, and some items are
he item difficulty P values are
nation coefficients are particularly
icients generally suggest that the
ly. The discrimination coefficients
ypically generated using respected

Table 4: Item Analyses for Grade 4 (n=180/174)

Item	A	B	C	D	E	Omit	r	Corrected r
1	0.0%	93.3%*	2.2%	3.3%	0.6%	0.6%	0.18	0.14
	1.7%	93.1%*	2.9%	1.1%	1.1%	0.0%	0.02	-0.02
2	27.8%	4.4%	51.1%*	16.7%	--	0.0%	0.38	0.31
	29.9%	6.3%	55.2%*	8.6%	--	0.0%	0.45	0.40
3	53.3%	30.0%*	6.7%	9.4%	--	0.6%	0.20	0.13
	48.3%	33.9%*	8.0%	9.8%	--	0.0%	0.18	0.11
4	72.2%*	14.4%	7.8%	5.6%	--	0.0%	0.20	0.14
	57.5%*	15.5%	17.2%	8.6%	--	1.1%	0.30	0.24
5	11.1%	48.3%*	11.1%	29.4%	--	0.0%	0.35	0.28
	12.6%	55.2%*	10.3%	20.7%	--	1.1%	0.41	0.36
6	16.1%	15.6%	47.8%	18.9%*	--	1.7%	0.12	0.06
	23.0%	11.5%	37.9%	26.4%*	--	1.1%	0.16	0.10
7	8.3%	17.2%	71.1%*	3.3%	--	0.0%	0.20	0.14
	2.9%	12.6%	77.6%*	6.3%	--	0.6%	0.43	0.39
8	35.0%	33.3%*	10.6%	20.6%	--	0.6%	0.34	0.27
	27.6%	37.4%*	16.1%	17.8%	--	1.1%	0.26	0.20
9	27.2%	41.1%*	13.9%	17.8%	--	0.0%	0.08	0.01
	29.3%	38.5%*	13.8%	17.8%	--	0.6%	0.14	0.08
10	7.8%	57.2%*	27.2%	7.8%	--	0.0%	0.40	0.34
	4.6%	69.5%*	18.4%	7.5%	--	0.0%	0.21	0.15
11	2.8%	4.4%	2.2%	89.4%*	--	1.1%	0.29	0.25
	6.3%	4.6%	2.3%	86.8%*	--	0.0%	0.45	0.42
12	10.6%	65.6%*	6.1%	16.7%	--	1.1%	0.37	0.30
	6.9%	73.6%*	6.9%	12.1%	--	0.6%	0.43	0.38
13	18.3%	10.0%	63.3%*	5.0%	3.3%	0.0%	0.17	0.10
	14.4%	13.2%	64.9%*	4.0%	3.4%	0.0%	0.32	0.26
14	7.2%	11.1%	11.7%	33.9%*	36.1%	0.0%	0.24	0.18
	6.3%	14.4%	8.0%	47.1%*	23.6%	0.6%	0.39	0.34
15	70.6%.	9.4%	2.8%	16.1%*	--	1.1%	0.20	0.15
	58.0%	17.8%	4.6%	18.4%*	--	1.1%	0.29	0.24
16	62.8%*	8.3%	13.9%	15.0%	--	0.0%	0.39	0.32
	69.5%*	11.5%	8.6%	8.6%	--	1.7%	0.47	0.42
17	46.7%	15.0%	15.0%	21.7%*	--	1.7%	0.36	0.31
	44.8%	10.9%	14.4%	27.6%*	--	2.3%	0.21	0.15
18	61.7%*	10.0%	6.7%	21.7%	--	0.0%	0.30	0.23
	66.7%*	8.6%	6.3%	18.4%	--	0.0%	0.33	0.28
19	13.3%	66.7%*	8.9%	11.1%	--	0.0%	0.42	0.36
	13.8%	64.4%*	8.0%	13.8%	--	0.0%	0.45	0.40
20	41.1%	18.3%	5.6%	35.0%*	--	0.0%	0.44	0.38
	38.5%	12.6%	6.3%	40.2%*	--	2.3%	0.31	0.25
21	28.3%	28.3%	33.9%*	7.8%	--	1.7%	0.32	0.26
	31.0%	21.3%	40.2%*	5.7%	--	1.7%	0.23	0.17
22	60.0%*	12.2%	13.3%	13.9%	--	0.6%	0.32	0.25
	61.5%*	14.4%	12.1%	10.9%	--	1.1%	0.38	0.33
23	30.6%*	15.0%	16.1%	37.2%	--	1.1%	0.26	0.19
	33.9%*	13.8%	13.8%	36.8%	--	1.7%	0.07	0.01
24	26.1%	42.8%*	18.3%	12.2%	--	0.6%	0.18	0.10
	18.4%	41.4%*	23.0%	15.5%	--	1.7%	0.26	0.20
25	5.0%	12.2%	76.1%*	6.1%	--	0.6%	0.43	0.37
	14.9%	13.2%	63.8%*	6.9%	--	1.1%	0.64	0.60
26	20.0%	12.8%	35.0%*	4.4%	26.7%	1.1%	0.35	0.28
	17.8%	10.3%	42.0%*	9.8%	19.0%	1.1%	0.38	0.32

27	8.3%	13.9%	5.6%	71.1%*	--	1.1%	0.56	0.51
	11.5%	15.5%	5.7%	66.1%*	--	1.1%	0.56	0.52
28	17.2%	16.1%	52.8%*	11.7%	--	2.2%	0.51	0.45
	10.3%	25.9%	50.6%*	10.3%	--	2.9%	0.46	0.41
29	56.7%	25.0%*	11.1%	5.6%	--	1.7%	0.09	0.03
	48.9%	33.3%*	8.6%	6.9%	--	2.3%	0.18	0.12
30	12.2%	31.7%	37.2%*	16.7%	--	2.2%	0.26	0.19
	8.6%	28.2%	44.3%*	17.2%	--	1.7%	0.26	0.20
31	5.6%	78.9%*	10.6%	3.9%	--	1.1%	0.43	0.38
	6.9%	74.7%*	7.5%	9.8%	--	1.1%	0.50	0.46
32	18.3%	13.9%	58.3%*	8.9%	--	0.6%	0.44	0.37
	16.1%	17.8%	56.9%*	9.2%	--	0.0%	0.49	0.44
33	43.3%*	18.3%	17.2%	21.1%	--	0.0%	0.22	0.15
	43.7%*	21.8%	16.7%	17.8%	--	0.0%	0.47	0.42
34	11.7%	13.3%	63.3%*	11.7%	--	0.0%	0.39	0.33
	16.1%	25.9%	48.9%*	8.6%	--	0.6%	0.55	0.50
35	48.9%*	18.3%	10.6%	21.1%	--	1.1%	0.30	0.23
	49.4%*	23.0%	10.9%	13.2%	--	3.4%	0.30	0.24
36	13.3%	10.6%	62.2%*	13.9%	--	0.0%	0.35	0.28
	25.9%	12.6%	56.9%*	4.0%	--	0.6%	0.48	0.42
37	16.1%	15.0%	18.3%	50.0%*	--	0.6%	0.26	0.19
	14.4%	12.6%	24.1%	46.6%*	--	2.3%	0.39	0.33
38	25.6%	18.9%	41.1%*	13.3%	--	1.1%	0.34	0.28
	21.8%	17.8%	46.6%*	11.5%	--	2.3%	0.39	0.34
39	51.7%	23.3%	13.3%*	10.6%	--	1.1%	-0.06	-0.11
	36.2%	31.6%	17.8%*	12.1%	--	2.3%	0.03	-0.02
40	21.7%	54.4%*	15.6%	6.1%	--	2.2%	0.38	0.31
	14.9%	61.5%*	12.6%	5.7%	--	5.2%	0.34	0.28
41	21.7%	25.6%	28.9%*	21.1%	--	2.8%	0.19	0.12
	17.8%	27.0%	31.0%*	21.8%	--	2.3%	0.22	0.16
42	34.4%*	5.0%	13.3%	46.1%	--	1.1%	0.19	0.12
	48.9%*	6.9%	12.1%	29.9%	--	2.3%	0.26	0.20
43	8.3%	33.9%*	48.3%	8.3%	--	1.1%	0.15	0.08
	8.6%	42.0%*	38.5%	6.9%	--	4.0%	0.18	0.12
44	27.2%	14.4%	39.4%*	18.9%	--	0.0%	0.27	0.20
	22.4%	20.1%	34.5%*	19.5%	--	3.4%	0.18	0.12
45	7.8%*	35.0%	21.7%	33.3%	--	2.2%	-0.05	-0.09
	11.5%*	37.4%	27.0%	20.1%	--	4.0%	0.15	0.11
46	15.0%	40.0%	38.3%*	6.1%	--	0.6%	0.48	0.42
	19.0%	29.9%	43.7%*	5.2%	--	2.3%	0.45	0.40
47	24.4%*	22.8%	25.6%	26.1%	--	1.1%	0.23	0.17
	29.9%*	24.7%	22.4%	19.5%	--	3.4%	0.21	0.15
48	37.2%*	28.9%	21.7%	11.1%	--	1.1%	0.21	0.14
	34.5%*	33.3%	16.7%	10.9%	--	4.6%	0.18	0.12
49	17.2%	9.4%	57.8%*	13.9%	--	1.7%	0.40	0.33
	10.9%	11.5%	57.5%*	13.8%	--	6.3%	0.34	0.28
50	26.1%*	28.3%	22.8%	21.7%	--	1.1%	0.18	0.11
	36.2%*	17.8%	25.9%	13.8%	--	6.3%	0.16	0.09
51	17.2%*	56.1%	13.3%	12.2%	--	1.1%	-0.06	-0.12
	13.2%*	53.4%	13.2%	15.5%	--	4.6%	-0.09	-0.13
52	25.0%	32.8%	23.3%*	16.7%	--	2.2%	0.28	0.22
	27.0%	31.0%	24.1%*	13.2%	--	4.6%	0.33	0.28

Table 5: Item Analyses for Grade 5 (n=215/168)

Item	A	B	C	D	E	Omit	r	Corrected r
1	49.3%*	21.4%	10.2%	6.0%	11.6%	1.4%	0.45	0.39
	59.5%*	18.5%	7.7%	3.6%	10.7%	0.0%	0.30	0.24
2	10.2%	9.8%	24.2%	41.9%*	13.5%	0.5%	0.39	0.33
	7.7%	8.3%	17.3%	54.2%*	11.9%	0.6%	0.43	0.37
3	17.2%	7.9%	16.7%	56.7%*	--	1.4%	0.29	0.22
	13.1%	8.3%	25.6%	51.2%*	--	1.8%	0.41	0.36
4	40.5%	26.5%	14.0%	19.1%*	--	0.0%	0.10	0.04
	28.0%	25.6%	26.2%	19.6%*	--	0.6%	-0.02	-0.08
5	54.4%*	9.3%	11.6%	22.8%	--	1.9%	0.35	0.28
	70.8%*	9.5%	8.3%	11.3%	--	0.0%	0.30	0.25
6	27.0%	4.7%	50.7%*	2.3%	12.6%	2.8%	0.16	0.09
	32.7%	4.8%	46.4%*	1.2%	13.7%	1.2%	0.23	0.17
7	22.3%	31.2%*	28.8%	16.3%	--	1.4%	0.28	0.21
	20.8%	42.9%*	22.0%	13.7%	--	0.6%	0.21	0.15
8	51.2%*	6.0%	14.0%	26.5%	--	2.3%	0.25	0.18
	60.1%*	10.7%	17.3%	11.9%	--	0.0%	0.43	0.38
9	24.7%	11.2%	41.4%	20.9%*	--	1.9%	0.06	0.00
	31.5%	11.9%	37.5%	18.5%*	--	0.6%	-0.04	-0.09
10	3.3%	67.4%*	14.4%	7.0%	7.4%	0.5%	0.30	0.24
	7.7%	71.4%*	7.1%	6.5%	7.1%	0.0%	0.22	0.17
11	13.5%*	3.7%	77.2%	5.6%	--	0.0%	0.03	-0.02
	13.1%*	1.8%	77.4%	7.7%	--	0.0%	0.12	0.08
12	8.8%	11.2%	76.7%*	3.3%	--	0.0%	0.48	0.43
	10.7%	8.9%	78.0%*	2.4%	--	0.0%	0.40	0.36
13	14.4%	14.9%	64.7%*	6.0%	--	0.0%	0.35	0.28
	7.7%	23.8%	58.9%*	8.9%	--	0.6%	0.45	0.40
14	7.0%	87.0%*	2.3%	3.3%	--	0.5%	0.35	0.31
	2.4%	90.5%*	3.6%	3.6%	--	0.0%	0.41	0.38
15	19.1%	51.6%*	19.5%	9.3%	--	0.5%	0.39	0.33
	20.2%	53.0%*	20.2%	4.8%	--	1.8%	0.40	0.35
16	35.3%	19.1%*	18.1%	17.7%	7.9%	1.9%	0.10	0.04
	39.9%	28.0%*	14.9%	12.5%	4.8%	0.0%	0.17	0.12
17	42.8%*	12.1%	23.7%	20.9%	--	0.5%	0.08	0.00
	46.4%*	12.5%	14.9%	25.0%	--	1.2%	0.18	0.11
18	53.5%*	14.0%	24.7%	6.0%	--	1.9%	0.26	0.19
	58.9%*	12.5%	19.6%	7.7%	--	1.2%	0.45	0.40
19	60.9%*	6.0%	25.1%	7.0%	--	0.9%	0.27	0.20
	64.9%*	5.4%	22.0%	6.5%	--	1.2%	0.33	0.28
20	2.8%	3.7%	11.2%	80.0%*	--	2.3%	0.30	0.24
	7.1%	4.8%	16.1%	70.2%*	--	1.8%	0.28	0.22
21	29.8%	20.0%*	17.7%	17.2%	14.9%	0.5%	0.21	0.15
	39.9%	15.5%*	19.6%	12.5%	11.3%	1.2%	0.23	0.18
22	50.2%*	21.4%	9.3%	17.2%	--	1.9%	0.46	0.40
	60.7%*	18.5%	5.4%	13.7%	--	1.8%	0.47	0.42
23	30.2%	26.5%	8.4%	8.8%	25.1%*	0.9%	0.39	0.33
	33.3%	19.6%	5.4%	8.9%	32.1%*	0.6%	0.44	0.39
24	24.7%	31.2%	15.3%	27.9%*	--	0.9%	0.22	0.15
	27.4%	32.7%	7.7%	31.0%*	--	1.2%	0.13	0.07
25	57.7%	29.3%*	6.5%	6.0%	--	0.5%	0.41	0.35
	48.8%	42.9%*	4.8%	3.0%	--	0.6%	0.31	0.25
26	14.9%	65.6%*	8.8%	10.2%	--	0.5%	0.47	0.41
	10.7%	66.1%*	8.9%	13.7%	--	0.6%	0.52	0.47

27	38.1%	13.5%	20.0%	27.9%*	--	0.5%	0.25	0.19
	44.6%	13.1%	16.7%	23.8%*	--	1.8%	0.24	0.19
28	11.6%	16.3%	59.5%*	10.7%	--	1.9%	0.38	0.32
	7.7%	14.3%	64.9%*	11.9%	--	1.2%	0.50	0.45
29	26.0%*	24.2%	21.9%	26.0%	--	1.9%	0.22	0.16
	27.4%*	25.6%	26.2%	19.6%	--	1.2%	0.42	0.38
30	64.2%*	14.4%	11.2%	8.4%	--	1.9%	0.17	0.10
	66.7%*	13.7%	8.3%	9.5%	--	1.8%	0.29	0.23
31	15.8%	46.5%*	17.7%	19.5%	--	0.5%	0.17	0.10
	25.0%	40.5%*	16.1%	17.9%	--	0.6%	0.12	0.06
32	5.6%	12.6%	78.6%*	2.3%	--	0.9%	0.45	0.40
	7.1%	10.7%	79.8%*	0.6%	--	1.8%	0.43	0.38
33	42.8%*	16.7%	23.7%	15.8%	--	0.9%	0.38	0.32
	47.0%*	17.3%	22.0%	13.1%	--	0.6%	0.39	0.33
34	17.2%	34.0%	23.7%*	23.3%	--	1.9%	0.22	0.16
	12.5%	35.1%	36.3%*	14.3%	--	1.8%	0.28	0.22
35	8.8%	30.2%	24.7%	35.3%*	--	0.9%	0.33	0.27
	10.1%	30.4%	13.7%	44.0%*	--	1.8%	0.36	0.30
36	71.2%*	12.1%	10.2%	5.1%	--	1.4%	0.42	0.36
	73.8%*	10.1%	11.9%	4.2%	--	0.0%	0.36	0.31
37	13.0%	40.0%	30.2%	14.9%*	--	1.9%	0.09	0.03
	10.1%	42.9%	28.0%	19.0%*	--	0.0%	0.10	0.05
38	13.5%	17.7%	16.3%	52.1%*	--	0.5%	0.37	0.30
	10.1%	14.9%	20.2%	53.6%*	--	1.2%	0.51	0.46
39	9.3%	15.3%	46.0%	27.4%*	--	1.9%	0.38	0.32
	8.9%	13.1%	40.5%	36.3%*	--	1.2%	0.54	0.49
40	28.4%	43.7%*	12.1%	14.0%	--	1.9%	0.47	0.41
	22.6%	51.2%*	8.9%	15.5%	--	1.8%	0.52	0.48
41	11.2%	24.7%	20.0%	42.8%*	--	1.4%	0.48	0.42
	10.1%	19.6%	14.3%	55.4%*	--	0.6%	0.42	0.36
42	24.2%	12.6%	26.0%*	34.9%	--	2.3%	0.17	0.11
	26.8%	10.7%	34.5%*	25.6%	--	2.4%	0.11	0.05
43	25.6%	13.5%	36.7%*	21.9%	--	2.3%	0.04	-0.03
	25.6%	15.5%	36.9%*	19.0%	--	3.0%	0.19	0.12
44	40.0%	25.6%	14.0%	17.2%*	--	3.3%	0.10	0.05
	33.9%	33.9%	11.3%	14.9%*	--	6.0%	0.11	0.07
45	13.0%	17.2%	41.9%*	23.7%	--	4.2%	0.42	0.36
	16.1%	20.2%	48.8%*	11.3%	--	3.6%	0.54	0.49
46	49.3%	27.9%*	10.2%	9.3%	--	3.3%	0.18	0.12
	47.0%	33.3%*	8.9%	7.1%	--	3.6%	0.32	0.27
47	15.3%	38.6%	25.1%	17.2%*	--	3.7%	-0.08	-0.13
	13.7%	43.5%	23.2%	14.9%*	--	4.8%	0.10	0.05
48	22.8%	21.4%	30.2%*	22.3%	--	3.3%	0.29	0.23
	36.3%	16.1%	30.4%*	14.3%	--	3.0%	0.36	0.30
49	25.6%	17.7%	24.2%	29.3%*	--	3.3%	0.27	0.20
	21.4%	22.0%	26.2%	26.2%*	--	4.2%	0.40	0.35
50	24.2%	20.5%	21.9%	30.2%*	--	3.3%	0.28	0.22
	17.3%	26.2%	25.0%	28.0%*	--	3.6%	0.31	0.25
51	13.5%	40.0%*	16.7%	26.0%	--	3.7%	0.35	0.29
	13.1%	45.2%*	13.1%	23.2%	--	5.4%	0.43	0.38
52	14.4%	18.1%	17.2%	46.5%*	--	3.7%	0.35	0.29
	12.5%	21.4%	14.3%	47.6%*	--	4.2%	0.40	0.34

Table 6: Item Analyses for Grade 6 (n=165/166)

Item	A	B	C	D	E	Omit	r	Corrected r
1	58.8%*	12.1%	24.2%	4.2%	--	0.6%	0.25	0.17
	78.9%*	5.4%	13.3%	2.4%	--	0.0%	0.26	0.22
2	11.5%	53.3%*	20.0%	14.5%	--	0.6%	0.33	0.26
	6.6%	62.7%*	24.1%	6.6%	--	0.0%	0.21	0.15
3	10.3%	13.9%	23.0%	5.5%	47.3%*	0.0%	0.09	0.02
	4.8%	9.6%	24.7%	6.0%	54.8%*	0.0%	0.08	0.02
4	13.3%	3.0%	5.5%	78.2%*	--	0.0%	0.20	0.14
	11.4%	4.8%	11.4%	71.7%*	--	0.6%	0.22	0.16
5	2.4%	30.3%	58.2%*	9.1%	--	0.0%	0.37	0.31
	5.4%	27.1%	59.6%*	7.2%	--	0.6%	0.36	0.30
6	16.4%	57.6%*	4.8%	20.6%	--	0.6%	0.27	0.20
	16.3%	62.0%*	11.4%	9.6%	--	0.6%	0.34	0.28
7	12.7%	3.0%	1.2%	82.4%*	--	0.6%	0.27	0.21
	4.8%	3.0%	4.8%	87.3%*	--	0.0%	0.28	0.24
8	8.5%	1.2%	82.4%*	7.3%	--	0.6%	0.30	0.24
	14.5%	1.8%	72.9%*	9.6%	--	1.2%	0.21	0.15
9	38.2%*	24.2%	10.9%	25.5%	--	1.2%	0.00	-0.07
	37.3%*	22.9%	16.9%	21.7%	--	1.2%	0.19	0.13
10	11.5%	67.9%*	4.2%	16.4%	--	0.0%	0.18	0.11
	13.9%	62.7%*	7.8%	14.5%	--	1.2%	0.37	0.31
11	86.1%*	6.7%	2.4%	4.2%	--	0.6%	0.08	0.03
	77.7%*	10.8%	4.8%	5.4%	--	1.2%	0.28	0.24
12	72.7%*	5.5%	8.5%	13.3%	--	0.0%	0.41	0.35
	69.9%*	8.4%	8.4%	13.3%	--	0.0%	0.41	0.36
13	86.1%*	2.4%	4.8%	6.7%	--	0.0%	0.39	0.35
	81.3%*	4.8%	5.4%	7.8%	--	0.6%	0.55	0.51
14	33.3%*	20.0%	5.5%	40.6%	--	0.6%	0.15	0.08
	27.1%*	25.9%	7.2%	39.2%	--	0.6%	0.18	0.12
15	39.4%*	22.4%	18.8%	17.6%	--	1.8%	0.29	0.22
	36.1%*	20.5%	25.9%	16.3%	--	1.2%	0.25	0.20
16	11.5%	8.5%	63.6%*	15.2%	--	1.2%	0.33	0.26
	13.9%	9.6%	61.4%*	13.9%	--	1.2%	0.48	0.43
17	72.1%*	11.5%	4.8%	11.5%	--	0.0%	0.21	0.14
	61.4%*	18.1%	4.8%	15.7%	--	0.0%	0.32	0.27
18	10.3%	5.5%	75.8%*	8.5%	--	0.0%	0.47	0.42
	13.3%	7.2%	71.7%*	7.8%	--	0.0%	0.48	0.44
19	15.8%	16.4%	26.7%	41.2%*	--	0.0%	0.10	0.02
	24.1%	12.7%	22.9%	40.4%*	--	0.0%	0.26	0.20
20	5.5%	73.3%*	3.0%	17.6%	--	0.6%	0.41	0.36
	4.2%	73.5%*	7.8%	13.9%	--	0.6%	0.46	0.42
21	3.6%	16.4%	4.8%	72.1%*	2.4%	0.6%	0.37	0.31
	10.8%	14.5%	6.6%	60.8%*	7.2%	0.0%	0.37	0.32
22	21.2%	15.8%	38.8%*	24.2%	--	0.0%	0.09	0.02
	24.7%	15.1%	36.7%*	22.9%	--	0.6%	0.28	0.22
23	20.0%	20.6%	15.2%	43.6%*	--	0.6%	0.40	0.34
	19.3%	16.3%	18.7%	45.8%*	--	0.0%	0.41	0.36
24	12.1%	24.2%	12.1%	50.9%*	--	0.6%	0.28	0.21
	15.1%	20.5%	16.3%	44.6%*	--	3.6%	0.31	0.25
25	13.9%	7.9%	63.6%*	14.5%	--	0.0%	0.24	0.17
	16.9%	7.2%	59.0%*	16.3%	--	0.6%	0.32	0.27
26	45.5%*	19.4%	6.7%	28.5%	--	0.0%	0.25	0.18
	49.4%*	15.7%	9.6%	24.1%	--	1.2%	0.30	0.24

27	18.2%*	37.0%	12.7%	31.5%	--	0.6%	0.06	0.00
	22.3%*	38.0%	16.3%	23.5%	--	0.0%	0.14	0.09
28	33.3%*	33.3%	17.6%	12.7%	--	3.0%	0.07	0.00
	33.1%*	21.1%	24.1%	20.5%	--	1.2%	0.23	0.17
29	14.5%	44.2%*	27.9%	12.7%	--	0.6%	0.29	0.22
	17.5%	42.8%*	22.9%	16.3%	--	0.6%	0.46	0.41
30	23.6%	26.1%	26.1%*	21.8%	--	2.4%	0.31	0.25
	17.5%	33.1%	24.1%*	25.3%	--	0.0%	0.23	0.18
31	27.9%*	21.8%	33.9%	15.2%	--	1.2%	0.22	0.15
	28.9%*	19.3%	38.6%	13.3%	--	0.0%	0.41	0.37
32	26.7%	25.5%	26.7%*	19.4%	--	1.8%	-0.04	-0.11
	29.5%	22.3%	25.9%*	21.7%	--	0.6%	0.05	0.00
33	28.5%*	20.0%	26.7%	24.2%	--	0.6%	0.36	0.30
	31.9%*	21.7%	28.3%	16.9%	--	1.2%	0.25	0.19
34	44.2%	32.1%*	14.5%	8.5%	--	0.6%	0.07	0.00
	45.2%	22.9%*	15.1%	16.9%	--	0.0%	0.10	0.05
35	26.7%*	22.4%	33.3%	16.4%	--	1.2%	0.03	-0.04
	20.5%*	25.3%	32.5%	19.9%	--	1.8%	-0.05	-0.10
36	26.7%	42.4%	16.4%*	13.3%	--	1.2%	-0.04	-0.10
	21.7%	36.1%	28.9%*	12.7%	--	0.6%	-0.01	-0.06
37	33.9%*	23.0%	21.8%	20.6%	--	0.6%	0.21	0.14
	36.1%*	22.9%	19.3%	21.1%	--	0.6%	0.28	0.22
38	9.1%	52.7%*	13.9%	23.0%	--	1.2%	0.32	0.25
	16.3%	53.0%*	12.0%	18.7%	--	0.0%	0.25	0.19
39	13.3%	53.9%*	20.6%	10.9%	--	1.2%	0.28	0.20
	13.3%	55.4%*	22.3%	9.0%	--	0.0%	0.48	0.43
40	5.5%	12.1%	45.5%*	35.2%	--	1.8%	0.34	0.28
	6.0%	19.9%	39.8%*	34.3%	--	0.0%	0.49	0.44
41	28.5%	22.4%	32.1%*	13.3%	--	3.6%	0.39	0.33
	36.7%	20.5%	27.7%*	14.5%	--	0.6%	0.26	0.20
42	20.0%	20.6%	31.5%	26.7%*	--	1.2%	0.22	0.15
	18.1%	22.9%	33.7%	25.3%*	--	0.0%	0.33	0.28
43	7.9%	13.3%	18.2%	58.2%*	--	2.4%	0.36	0.30
	10.2%	13.3%	15.1%	61.4%*	--	0.0%	0.48	0.44
44	11.5%	34.5%	17.6%	35.2%*	--	1.2%	0.37	0.31
	14.5%	22.9%	20.5%	42.2%*	--	0.0%	0.43	0.38
45	9.7%	26.7%	24.2%	37.6%*	--	1.8%	0.34	0.27
	9.6%	23.5%	20.5%	45.8%*	--	0.6%	0.39	0.34
46	24.2%	11.5%	15.2%	47.9%*	--	1.2%	0.23	0.15
	26.5%	15.7%	12.7%	44.6%*	--	0.6%	0.38	0.33
47	22.4%*	24.2%	36.4%	13.9%	--	3.0%	0.10	0.04
	21.1%*	26.5%	33.1%	18.7%	--	0.6%	0.07	0.02
48	40.6%	34.5%*	8.5%	13.9%	--	2.4%	0.19	0.12
	41.6%	38.0%*	9.6%	10.2%	--	0.6%	0.27	0.22
49	13.3%*	30.3%	29.7%	25.5%	--	1.2%	0.14	0.09
	19.9%*	27.1%	28.3%	24.1%	--	0.6%	0.01	-0.04
50	11.5%	16.4%	63.6%*	6.1%	--	2.4%	0.42	0.35
	15.1%	18.1%	59.6%*	4.8%	--	2.4%	0.47	0.42
51	18.8%	22.4%	18.8%	38.2%*	--	1.8%	0.28	0.21
	21.1%	23.5%	12.0%	42.8%*	--	0.6%	0.36	0.31
52	23.0%	14.5%	22.4%*	37.6%	--	2.4%	0.31	0.25
	25.3%	14.5%	25.3%*	33.7%	--	1.2%	0.26	0.21
53	30.3%	18.8%	35.2%*	12.7%	--	3.0%	0.31	0.24
	29.5%	17.5%	42.2%*	9.6%	--	1.2%	0.49	0.44

54	47.3%*	12.1%	13.9%	24.2%	--	2.4%	0.49	0.43
	44.0%*	17.5%	13.3%	22.3%	--	3.0%	0.48	0.43
55	6.1%	14.5%	69.7%*	7.3%	--	2.4%	0.40	0.34
	7.8%	14.5%	66.9%*	7.8%	--	3.0%	0.46	0.41
56	15.2%	26.1%	26.7%*	28.5%	--	3.6%	0.03	-0.04
	21.1%	23.5%	30.7%*	21.7%	--	3.0%	0.18	0.13
57	30.3%	33.9%*	9.7%	21.8%	--	4.2%	0.30	0.23
	21.1%	37.3%*	15.1%	24.1%	--	2.4%	0.07	0.01

Internal Consistency Reliability

Test reliability is a function of the systematic behavior of testtakers. Students who have not been exposed to test content are theoretically expected to select responses only by guess--scores from such students should be unreliable, by definition. Therefore, in the present study internal reliability coefficients were computed only for posttest data, after an intervention was implemented for some students. These results are presented in Table 7.

Table 7
Posttest Reliability (KR-20) Coefficients

Grade	v	n	r
4	52	174	.82
5	52	168	.83
6	57	166	.82

The subjects in the study included both students who received the "Heart Smart" curriculum intervention during the 1986-87 academic year and students who were enrolled in a control school. To confirm that test data would be found to be more reliable when analyses were confined to intervention site children, the analyses reported in Table 8 were conducted. The results presented in Tables 7 and 8 suggest that the "Heart Smart" tests are reasonably reliable.

Table 8
Posttest Reliability (KR-20) Coefficients
across Intervention Cites

Grade	Subject Type	n	r
4	"Naive"	66	.74
	Intervention	108	.83
5	"Naive"	40	.78
	Intervention	128	.84
6	"Naive"	85	.77
	Intervention	81	.85

Item Representativeness and Result Generalizability

Recently the Centers for Disease Control awarded a major contract for a school health education evaluation to Abt Associates. This evaluation project resulted in a six-volume report. Connell et al. (1985) present psychometric analyses of the performance of 382 test items administered to a national sample of 18,576 students.

Selected items from the CDC item pool were included on each of the three "Heart Smart" tests. The use of these "linking" items allows a comparison of the results reported here with the results reported by Connell et al. (1985). Logically, the performance of the linking items can be comparable in both the CDC samples and the "Heart Smart" samples only if the subjects in both samples are reasonably comparable and if the non-linking items in both item pools are also reasonably similar. This comparison represents what some researchers have called a Cornfield and Tukey (1956) "bridge".

Tables 9, 10 and 11 present comparisons involving both item difficulty P values and item discrimination coefficients on both a pre and a posttest basis. The results across the two samples of subjects are reasonably comparable. Items that were harder for the CDC subjects also tended to be harder for the "Heart Smart" subjects, as indicated by item difficulty P values. Item discrimination coefficients also tended to be similar.

Table 9
CDC Linking Items vs. Heart Smart Items: Grade Four
(n=180/174)

CDC Item	Page	CDC Results P	r	H.S. Item	P	r
6:16	88	23%	.09	48	37%	.21
		30%	.21		34%	.18
4:39	90	64%	.39	49	58%	.40
		75%	.21		57%	.34
5:40	93	29%	.18	50	26%	.18
		43%	.19		36%	.16
4:40	93	20%	-.01	51	17%	-.06
		22%	.13		13%	-.09
2:32	75	21%	.05	52	23%	.28
		33%	.14		24%	.33

Table 10
CDC Linking Items vs. Heart Smart Items: Grade Five
(n=215/168)

CDC Item	Page	CDC Results P	r	H.S. Item	P	r
3:14	72	23%	.01	48	30%	.29
		44%	.22		30%	.36
4:31	74	38%	.16	49	29%	.27
		44%	.26		26%	.40
4:17	90	26%	.23	50	30%	.28
		35%	.12		28%	.31
ALL:31	63	35%	.36	51	40%	.35
		48%	.51		45%	.43
1:11	67	59%	.29	52	46%	.35
		67%	.43		48%	.40

Table 11
CDC Linking Items vs. Heart Smart Items: Grade Six
(n=180/165)

CDC Item	Page	CDC Results P	r	H.S. Item	P	r
2:21	59	44%	.27	45	38%	.34
		59%	.40		46%	.40
5:25	62	63%	.33	46	48%	.23
		68%	.28		44%	.38
3:40	92	26%	.00	47	22%	.10
		26%	.14		21%	.07
2:40	92	17%	.07	48	34%	.19
		28%	.12		38%	.27
1:40	92	20%	.06	49	13%	.14
		27%	.00		20%	.01
4:32	76	68%	.24	50	64%	.42
		71%	.17		60%	.47
2:15	85	38%	.20	51	38%	.28
		52%	.47		43%	.36
ALL:33	77	37%	.41	52	22%	.31
		45%	.40		25%	.26
4:24	63	35%	.22	53	35%	.31
		56%	.43		42%	.49
1:16	87	44%	.27	54	47%	.49
		50%	.26		44%	.48
2:12	69	78%	.35	55	70%	.40
		81%	.34		67%	.46
6:39	91	30%	-.01	56	27%	.03
		39%	.19		31%	.18
6:17	91	33%	.11	57	34%	.30
		41%	.08		37%	.07

Summary

The study investigated the measurement integrity of the "Heart Smart" cognitive tests. Tests for forth-, fifth-, and sixth-graders measure health-related knowledge involving physiology, nutrition, exercise, and behavior skills. The report presents tables of specifications, test floors and ranges, a demographic profile of the sample, item analyses, and test reliability analyses. Also reported are analyses investigating the generalizability of results to national samples.

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APPENDIX A:

"HEART SMART" COGNITIVE TESTS

JEFFERSON PARISH HEART STUDY

"HEART SMART"

SCHEDULE C-1-4

KNOWLEDGE TEST - 4

	LABEL	0 5	1-4 5-9 10-11

INSTRUCTIONS: Read each question carefully and circle the letter of the best answer. Remember to circle only ONE answer. Answer EVERY question even if you must guess.

DO NOT WRITE IN THIS SPACE

1. The heart is like a:
   a) wheel
   b) pump
   c) filter — 12
   d) computer
   e) none of the above
2. The word pulse refers to:
   a) your blood pressure
   b) the amount of blood in your heart
   c) how fast your heart beats — 13
   d) the amount of blood your heart can pump
3. The veins in your body:
   a) carry blood to your arms and legs
   b) return blood to the heart
   c) bring blood to the skin — 14
   d) move blood to the brain
4. The heart is mostly made up of:
   a) muscles
   b) veins
   c) arteries — 15
   d) capillaries
5. The heart moves fluid into tubes called:
   a) lipids
   b) arteries
   c) cholesterols — 16
   d) intestines

KNOWLEDGE TEST - 4

DO NOT WRITE IN THIS SPACE

6. The largest blood vessel in the body is called the:
   a) capillary
   b) subclavian
   c) heart — 17
   d) aorta

7. Salt may:
   a) be good for your heart
   b) cause dental caries
   c) raise your blood pressure — 18
   d) be a CV-healthy food

8. Your blood brings:
   a) oxygen and carbon monoxide to the brain
   b) nutrients and oxygen to the cells
   c) water and bacteria to the heart — 19
   d) vitamins and carbon monoxide to the hands and feet

9. Which one of the following is <u>true</u>?
   a) fat is <u>not</u> used for energy
   b) vitamins help the body use food to grow and heal
   c) the major use for sodium is to provide energy — 20
   d) carbohydrates are also called proteins

10. Which exercise is best for your heart?
   a) bowling
   b) swimming
   c) lifting weights — 21
   d) football

11. Which one of the following sets of foods includes <u>all</u> healthy snacks?
   a) Koolaid, potato chips, apples
   b) granola bars, cookies, carrot sticks
   c) raisins, candy bars, fruit juice — 22
   d) grapes, yogurt, carrot sticks

KNOWLEDGE TEST - 4

DO NOT WRITE IN THIS SPACE

12. The four food groups are:
    a) bread group, dessert group, vegetable group, milk group
    b) milk group, bread group, fruits and vegetable group, meat group
    c) fruit group, vegetable group, protein group, snacks group — 23
    d) milk and vegetables group, fruit group, breakfast group, vitamin group

13. Creamy and greasy foods contain a lot of:
    a) sugar
    b) salt
    c) fat — 24
    d) vitamins
    e) water

14. Table salt contains:
    a) fructose
    b) polysorbate
    c) vitamin B — 25
    d) sodium
    e) none of the above

15. Peanuts belong to the:
    a) nuts food group
    b) bread food group
    c) milk food group — 26
    d) meat food group

16. Which of these foods are <u>all</u> low in sodium?
    a) pear, carrot sticks, raisins
    b) pickles, hotdogs, peas
    c) bacon, pretzel, catsup — 27
    d) potato chips, sausage, ham

17. The major nutrients are:
    a) carbohydrates, meat, minerals, protein, and milk
    b) eggs, fat, vitamins, water, carbohydrates, and nuts
    c) cholesterol, calories, protein, water, fat and vitamins — 28
    d) carbohydrates, vitamins, proteins, water, fat and minerals

KNOWLEDGE TEST - 4

DO NOT WRITE IN THIS SPACE

18. Bologna and french fries are high in:
    a) fat
    b) sugar
    c) vitamins 29
    d) calcium

19. John was making a snack after school one day. He wanted a snack that would be CV healthy. Which snack would you suggest he prepare?
    a) biscuit, butter, jelly, milk
    b) whole wheat bread, turkey, skim milk
    c) cheese sandwich and potato chips 30
    d) bread, bologna, mayonnaise, whole milk

20. Foods high in sugar:
    a) can lower your blood pressure
    b) are low in calories
    c) help you think better in school 31
    d) have few nutrients

21. Which of the following are all risk factors for heart disease?
    a) not getting exercise, eating fatty foods, low blood pressure
    b) smoking cigarettes, eating low fat foods, high blood pressure
    c) eating fatty foods, smoking cigarettes, high blood pressure 32
    d) eating fatty foods, jogging, high blood pressure

22. A food in the milk group that is low in fat is:
    a) skim milk
    b) butter
    c) American cheese 33
    d) sour cream

23. Which one of the following is true about stress?
    a) it can be good or bad
    b) it means you are relaxed
    c) it will lower your blood pressure 34
    d) it is not normal for people to have stress at times

KNOWLEDGE TEST - 4

DO NOT WRITE IN THIS SPACE

24. A stressor is:
    a) something that measures cholesterol
    b) a situation that causes you to feel upset
    c) a person who is in charge (such as a parent or teacher) 35
    d) a relaxing activity

25. Joyce has practiced a speech for a long time but still thinks that she will forget what she's supposed to say when she has to give it to her class. To lower her stress Joyce should:
    a) look at the floor while she gives the speech
    b) think about how upset the teacher will be if she forgets her speech
    c) tell herself that she knows her speech and will do just fine 36
    d) put the problem out of her mind and not try

26. When you are under stress you should:
    a) think about it a lot
    b) argue about your problem with a friend
    c) practice relaxation skills 37
    d) eat more food
    e) none of the above

27. Which of the following foods are <u>all</u> CV healthy?
    a) hotdogs, juice, baked potatoes
    b) pizza, cheese, whole milk
    c) hamburger patty, canned peas, Koolaid 38
    d) baked fish, fresh green beans, skim milk

28. When you have a decision to make, you can always:
    a) make a quick decision
    b) talk to your friend and do what she or he says
    c) consider the choices before you do anything 39
    d) plan to think about the problem later

29. Which one of the following is <u>not</u> true:
    a) beans belong to the meat group
    b) potatoes belong to the bread and cereal group
    c) lettuce belongs to the fruit and vegetable group 40
    d) yogurt belongs to the milk and milk products group

KNOWLEDGE TEST - 4

DO NOT WRITE IN THIS SPACE

30. What is the recommended number of servings per day?
    a) 5 servings from the meat group
    b) 2 servings from the fruit and vegetable group
    c) 3 servings from the milk and milk products group — 41
    d) 1 serving from the bread and cereal group

31. Which of the following foods are CV-healthy?
    a) salty foods
    b) fresh foods
    c) greasy foods — 42
    d) creamy foods

32. Which of the following foods is not a sugary food?
    a) vanilla ice cream
    b) Coca-Cola
    c) bran muffin — 43
    d) chocolate chip cookies

33. Which is the un-CV healthy way to cook fish?
    a) fried
    b) baked
    c) broiled — 44
    d) poached

34. A good reward for yourself would be
    a) treat yourself to a chocolate sundae
    b) tell your friends about your successes
    c) tell yourself you have done a good job — 45
    d) stop thinking about another decision that you have to make

35. In a CV-healthy diet, eggs should be eaten:
    a) no more than three times a week
    b) everyday
    c) to provide lipids — 46
    d) to prevent high cholesterol

KNOWLEDGE TEST - 4

DO NOT WRITE IN THIS SPACE

36. Sarah is going to move to a new city. Sarah knows that changing friends and teachers is stressful. She wants to choose a way to reduce this stress. What is the best thing for Sarah to do to cope with her stress?
    a) exercise weekly
    b) treat herself to a pizza
    c) tell herself that she will soon have new friends 47
    d) ask her family doctor

37. Relaxation exercises:
    a) can be used only at night to help you sleep
    b) should be done under the direction of an adult
    c) should be done three or four times a week 48
    d) can be used anytime

38. What are the three stages of a heart healthy workout?
    a) aerobic exercise bout, rest period, stretching period
    b) warm-up period, calisthenic period, rest period
    c) warm-up period, aerobic exercise bout, cool-down period 49
    d) calisthenic period, stretching period, cool-down period

39. What is a good heart rate to reach while doing heart healthy exercise?
    a) 60 beats per minute
    b) 100 beats per minute
    c) 150 beats per minute 50
    d) 200 beats per minute

40. When you do stretching exercises, it is best to:
    a) stretch until it hurts and hold it for 5 minutes
    b) slowly stretch until you feel it in your muscles and hold it for 10 seconds
    c) stretch as far as you can and then quickly draw back 51
    d) stretch only after you have reached a high heart rate

41. All of the following are benefits of exercise except:
    a) promotes growth and development
    b) makes the heart stronger
    c) increases body fat level 52
    d) lowers blood pressure

KNOWLEDGE TEST - 4

DO NOT WRITE IN THIS SPACE

42. When jogging, which part of the foot should hit the ground first?
    a) heel
    b) side
    c) ball 53
    d) toes

43. Doing push-ups, pull-ups, and sit-ups develops:
    a) cardiovascular endurance
    b) muscular endurance
    c) flexibility 54
    d) imbalance

44. When jumping rope for fitness, it is important to:
    a) jump as high as you can
    b) keep the arms straight
    c) jump without lifting your feet very high 55
    d) keep your legs straight

45. The most important part of physical fitness is:
    a) cardiovascular endurance
    b) flexibility
    c) muscular endurance 56
    d) strength

46. Cool-down exercises are important because they help the heart to:
    a) pump faster
    b) get stronger
    c) recover gradually 57
    d) grow larger

47. In an individual fitness program, you should:
    a) use activities based on your needs
    b) only do exercises that feel "easy"
    c) use the same activities whenever you exercise 58
    d) choose anaerobic activities

KNOWLEDGE TEST - 4

DO NOT WRITE IN THIS SPACE

48. Which are the most important in the prevention of cardiovascular disease?
    a) exercise and diet
    b) vitamins and minerals
    c) rest and relaxation
    d) medication and surgery

59
(6.16)

49. High blood pressure is made worse by:
    a) losing too much body weight
    b) reading too much
    c) using too much salt in the diet
    d) exercising too much

60
(4:39)

50. A stethoscope is an instrument which magnifies:
    a) sounds
    b) objects
    c) electrical impulses
    d) very slight motions

61
(5:40)

51. Which kind of blood vessel would one feel to check a pulse?
    a) arteries
    b) veins
    c) capillaries
    d) lymph

62
(4:40)

52. Too much saturated fat in your diet may cause diseases of the:
    a) respiratory system
    b) nervous system
    c) circulatory system
    d) skeletal system

63
(2:32)

JEFFERSON PARISH HEART STUDY

"HEART SMART"

SCHEDULE C-1-5
KNOWLEDGE TEST - 5

LABEL	0 5	1-4 5-9 10-11

INSTRUCTIONS: Read each question carefully and circle the letter of the best answer. Remember to circle only ONE answer. Answer EVERY question even if you must guess.

DO NOT WRITE IN THIS SPACE

1. Which of the following is a CV-healthy lunch?
   a) turkey on whole wheat bread, orange juice
   b) egg salad sandwich on white bread, whole milk — 12
   c) ham and cheese on rye bread, diet coke
   d) tuna fish salad sandwich on white bread, milkshake
   e) none of the above

2. A word referring to veins, arteries, and the heart:
   a) hypertension
   b) angina — 13
   c) atherosclerosis
   d) cardiovascular
   e) none of the above

3. Which one of the following is true?
   a) meat contains all the nutrients your body needs
   b) cholesterol is an essential energy nutrient — 14
   c) vitamins are carbohydrates
   d) most foods contain more than one nutrient

4. Hidden sources of sodium are found in large amounts in the following, except:
   a) Cheerios
   b) canned vegetables — 15
   c) Rice n' Shine
   d) frozen green beans

JEFFERSON PARISH HEART STUDY

"HEART SMART"

KNOWLEDGE TEST - 5

DO NOT WRITE IN THIS SPACE

5. In cooking chicken, which is the method of preparation that is worst for your heart?
   a) frying
   b) broiling — 16
   c) steaming
   d) poaching

6. The nation's number one killer is:
   a) cancer
   b) auto accidents — 17
   c) heart disease
   d) infection
   e) murder

7. Sodium chloride is:
   a) a poison
   b) table salt — 18
   c) bleach
   d) sugar

8. Food nutrients and oxygen travel to parts of the body in the:
   a) blood
   b) lipids — 19
   c) kidneys
   d) stomach

9. What makes the coronary arteries become blocked is called:
   a) sodium
   b) caries — 20
   c) carbon monoxide
   d) plaque

JEFFERSON PARISH HEART STUDY

"HEART SMART"

KNOWLEDGE TEST - 5

DO NOT WRITE IN THIS SPACE

10. Which of the following is an aerobic activity?
    a) bowling
    b) jumping rope — 21
    c) volleyball
    d) baseball
    e) none of the above

11. The word "aerobic" means:
    a) with oxygen
    b) eating — 22
    c) exercise that requires strength
    d) little movement

12. At the end of aerobic exercise, it is important to:
    a) sit down immediately
    b) do warm up activities — 23
    c) do cool down activities
    d) eat as soon as possible

13. To achieve cardiovascular fitness, a person should exercise:
    a) once a week for one hour
    b) regularly two times a week — 24
    c) at least three times a week
    d) none of the above

14. Which of the following groups of activities are <u>both</u> aerobic?
    a) watching T.V., jumping rope
    b) jogging, swimming — 25
    c) playing soccer, eating
    d) playing on a baseball team, talking

15. Which of the following are risk factors that can <u>all</u> be changed?
    a) blood pressure, smoking habits, age
    b) cholesterol, blood pressure, smoking habits — 26
    c) smoking habits, sex, cholesterol
    d) blood pressure, smoking habits, age

JEFFERSON PARISH HEART STUDY

"HEART SMART"

KNOWLEDGE TEST - 5

DO NOT WRITE IN THIS SPACE

16. An example of an anaerobic exercise is:
    a) jogging
    b) weight lifting — 27
    c) swimming
    d) jumping rope
    e) none of the above

17. Which of the following breakfasts include foods from all four food groups?
    a) orange juice, milk, toast, ham
    b) grapefruit, strawberries, milk, cereal — 28
    c) bacon, eggs, milk, yogurt
    d) granola, milk, cereal, apple

18. Sodium:
    a) can make your blood pressure go up
    b) only gets in food if you put table salt on your food — 29
    c) slows down your heart rate
    d) is <u>not</u> present in bacon

19. Which of the following sets of foods include <u>all</u> high fat foods?
    a) whole milk, bacon, fried foods
    b) butter, skim milk, apples — 30
    c) sausage, bananas, chocolate milk
    d) butter, whole milk, strawberries

20. Someone tells you, "If you smoke a cigarette, you can join our club." What should you do?
    a) go ahead and smoke to get in the club
    b) join the club and pretend that you are smoking — 31
    c) tell on the other kids
    d) say you want to be in the club, but you will not smoke because it's unhealthy.

JEFFERSON PARISH HEART STUDY

"HEART SMART"

KNOWLEDGE TEST - 5

DO NOT WRITE IN THIS SPACE

21. Which one of the following is high in saturated fat?
    a) peanut oil
    b) lard — 32
    c) corn oil
    d) safflower oil
    e) olives

22. A good decision:
    a) is made when all ideas are considered
    b) ends up the way you plan — 33
    c) is made very quickly
    d) is always easy to make

23. Which one of the following will give you <u>all</u> the nutrients your body needs?
    a) bananas
    b) broccoli — 34
    c) corn
    d) potatoes
    e) none of the above

24. Salt:
    a) causes lipids to build up
    b) is also called sodium benzonate — 35
    c) protects against heart disease
    d) none of the above

25. How many teaspoons in one tablespoon?
    a) 1/2
    b) 3 — 36
    c) 5
    d) 9

KNOWLEDGE TEST - 5

DO NOT WRITE IN THIS SPACE

26. John was making a snack after school one day. He wanted a snack that would be CV healthy. Which snack would you suggest he prepare?

a) biscuit, butter, jelly and milk

b) whole wheat bread, turkey, skim milk and a peach 37

c) cheese sandwich and potato chips

d) bread, bologna, mayonnaise and whole milk

27. Cholesterol can cause all of the following <u>except</u>:

a) plaque

b) clogged arteries 38

c) heart attacks

d) ulcers

28. Which of the following are <u>all</u> major risk factors for heart disease?

a) excessive alcohol consumption, aerobic exercise, being overweight

b) anaerobic exercise, cigarette smoking, low blood pressure 39

c) high blood pressure, cigarette smoking, high cholesterol

d) high blood pressure, eating unsaturated fat, running

29. All of the following are immediate effects of smoking, <u>except</u>:

a) elevated blood cholesterol

b) carbon monoxide replaces oxygen 40

c) heart rate increases

d) blood pressure increases

30. When you are anxious or upset:

a) your heart beats faster and your blood pressure goes up

b) your heart beats faster and your blood pressure goes down 41

c) your heart beats slower and your blood pressure goes down

d) your heart beats slower and your blood pressure goes up

KNOWLEDGE TEST - 5

DO NOT WRITE IN THIS SPACE

31. Which of the following statements is true?

a) 10% of the body is water

b) minerals are what make bones strong 42

c) the major use for sodium is to provide energy

d) carbohydrates are also called proteins

32. Joyce has practiced a speech for a long time, but still thinks that she will forget what she's supposed to say when she has to give it to her class. To lower her stress, Joyce should:

a) look at the floor while she gives the speech

b) think about how upset the teacher will be if she forgets her speech 43

c) tell herself that she will be able to do a good job

d) put it out of her mind and not try

33. Empowerment:

a) is the feeling of being in control of your life

b) means that you forget successful times 44

c) does not involve the successes of other people

d) is learning to control others

34. Carbon monoxide:

a) is good for your body

b) is more common in the air you breathe than in cigarette smoke 45

c) causes your heart to beat faster

d) adds oxygen to your blood

35. Smoking:

a) makes cholesterol go down

b) makes your heart beat slower 46

c) makes blood vessels get wider

d) none of the above

KNOWLEDGE TEST - 5

DO NOT WRITE IN THIS SPACE

36. Long-term effects of smoking can include:
    a) heart disease and cancer
    b) cancer, but not heart disease
    c) heart disease, but not cancer
    d) none of the above

47

37. Which one of the following seasonings is low in sodium?
    a) garlic salt
    b) ketchup
    c) celery salt
    d) garlic powder

48

38. Food labels can be used to find out all of the following except:
    a) calories
    b) nutrients
    c) serving or portion size
    d) where the food was grown

49

39. The major goal of aerobic dance is to:
    a) learn dance routines
    b) become a good dancer
    c) become more flexible
    d) improve cardiovascular endurance

50

40. In the correct jogging form, the body should be:
    a) perfectly straight
    b) slightly leaning forward
    c) bent over at the waist
    d) arms swing side to side

51

41. Which of the following is a heart healthy benefit of exerise?
    a) improved vision
    b) increased blood pressure
    c) reduced bone growth
    d) decreased blood fats

52

KNOWLEDGE TEST - 5

DO NOT WRITE IN THIS SPACE

42. What is muscular endurance?
    a) the ability to lift a heavy weight
    b) the ability to stop quickly 53
    c) the ability to exert force for a long period
    d) the ability to stretch muscles over a long distance

43. Which of the following is <u>not</u> helpful in designing a personal exercise program?
    a) picking activities you enjoy
    b) involving your friends in workouts 54
    c) making sure you eat right before exercising
    d) building a variety of activities into your program

44. Which activity increases muscular strength and endurance?
    a) running a 100-yard dash
    b) walking a mile 55
    c) doing summersaults
    d) wrestling

45. Which one statement is <u>not</u> true?
    a) Regular exercise will improve my ability to use oxygen.
    b) If I exercise, I can do work more efficiently. 56
    c) If I exercise, I can eat as much as I want.
    d) Regular exercise will help me lower my blood pressure.

46. Cholesterol:
    a) is in chicken <u>and</u> in vegetable oils
    b) can clog up your arteries 57
    c) is in foods from plants
    d) helps your blood pressure stay low

47. The more saturated a fat is,
    a) the clearer it is
    b) the more sodium it has 58
    c) the more complex carbohydrates it has
    d) the more solid it is

KNOWLEDGE TEST - 5

DO NOT WRITE IN THIS SPACE

48. You would like to try smoking because your friends do. This is an example of:

a) sibling rivalry
b) friendship
c) peer pressure
d) growing up

59
(3:14)

49. The main job of carbohydrates is to:

a) build and repair body tissue
b) aid in digestion
c) regulate body processes
d) provide energy

60
(4:31)

50. Which one of the following is not closely related to increased risk of cardiovascular disease?

a) smoking, obesity, and insufficient exercise
b) hypertension, high serum cholesterol, and obesity
c) smoking, hypertension, and drinking alcohol
d) urban residence, insufficient sleep, and immunizations

61
(4:17)

51. Which one of the following has nothing to do with making good decisions?

a) identifying the problem
b) picking the easiest solution
c) listing possible solutions
d) analyzing good and bad points about each possible solution

62
(ALL:31)

52. Larry is overweight. Which one of the following statements is true?

a) he has a greater chance of developing tuberculosis
b) he has a greater chance of developing cancer
c) he will probably grow out of his overweight problem
d) proper nutrition and increased exercise can help reduce his weight

63
(1:11)

JEFFERSON PARISH HEART STUDY

"HEART SMART"

SCHEDULE C-1-6

KNOWLEDGE TEST - 6

LABEL

1-4
5-9
10-11

0 5

INSTRUCTIONS: Read each question carefully and circle the letter of the best answer. Remember to circle only ONE answer. Answer EVERY question even if you must guess.

DO NOT WRITE IN THIS SPACE

1. Blood is made up of:
   a) red blood cells, white blood cells, plasma
   b) red blood cells, leukocytes, venules — 12
   c) veins, arteries, capillaries
   d) white blood cells, capillaries, leukocytes

2. Sodium chloride is:
   a) a poison
   b) table salt — 13
   c) bleach
   d) sugar

3. Which of the following is an aerobic activity?
   a) bowling
   b) football
   c) volleyball — 14
   d) baseball
   e) none of the above

4. When doing flexibility exercises one should:
   a) keep moving quickly
   b) stand up — 15
   c) bounce slowly
   d) use slow even movements

5. Flexibility is defined as the ability to:
   a) jog at a faster speed
   b) use muscular endurance — 16
   c) bend, twist and move slowly
   d) increase blood pressure

KNOWLEDGE TEST - 6

DO NOT WRITE IN THIS SPACE

6. A good decision for you is:
   a) if most people would agree
   b) when all ideas are thought out — 17
   c) made slowly and painfully
   d) difficult to make

7. Which of these foods are <u>all</u> low in sodium?
   a) potato chips, sausage, ham
   b) pickles, hot dogs, peas — 18
   c) bacon, pretzel, apple
   d) grapes, carrot sticks, raisins

8. Salt may:
   a) slow down your heart
   b) cause dental caries — 19
   c) raise your blood pressure
   d) clog your arteries

9. The major nutrients are:
   a) carbohydrates, fat, protein, vitamins, minerals and water
   b) protein, calories, minerals and fats — 20
   c) cholesterol, calories, protein, water and fat
   d) carbohydrate, fat, protein, vitamins and calories

10. John was making a snack after school one day. He wanted a snack that would be CV healthy. Which snack would you suggest he prepare?
   a) bacon, eggs, and an apple
   b) whole wheat bread and turkey — 21
   c) sandwich and potato chips
   d) cookies and whole milk

11. When you are anxious or upset:
   a) your heart beats faster and your blood pressure goes up
   b) your heart beats faster and your blood pressure goes down — 22
   c) your heart beats slower and your blood pressure goes down
   d) your heart beats slower and your blood pressure goes up

KNOWLEDGE TEST - 6

DO NOT WRITE IN THIS SPACE

12. If you want to know how much salt is in a food product, look for this word on the container:
    a) sodium
    b) ethanol
    c) fats
    d) carbohydrates

23

13. Relaxation helps you because:
    a) it slows your heart rate and relieves muscle tension
    b) it teaches you to practice
    c) it makes your heart beat faster
    d) it is a good way to do aerobic activity

24

14. Which one of the following is <u>true</u>?
    a) decision making is a skill that can be learned
    b) your first idea is usually the best decision
    c) decisions are best made by letting friends decide for you
    d) how good a decision is has little to do with the outcome of the decision

25

15. Assertive behavior is behavior that:
    a) considers both what you want and other people's feelings
    b) allows you to get what you want
    c) is polite even if you have to tell a "white lie"
    d) other people agree with

26

16. Which <u>one</u> of these is <u>not</u> important when you are trying to make a decision?
    a) think about all the possible alternatives
    b) consider the consequences of each possible action
    c) think about what your friends will think about you
    d) think about what you can control

27

KNOWLEDGE TEST - 6

DO NOT WRITE IN THIS SPACE

17. Smoking cigarettes will cause:
    a) carbon monoxide to enter the lungs and blood
    b) the heart rate to decrease — 28
    c) red blood cells to become larger
    d) the blood to become thinner and lighter

18. Cigarette smoking is <u>not</u> a cause of which of the following illnesses?
    a) cancer
    b) lung disease — 29
    c) diabetes
    d) heart disease

19. Too much sugar:
    a) makes your heart beat slower
    b) lowers your cholesterol — 30
    c) lowers your blood pressure
    d) tends to make you fatter

20. The four food groups are:
    a) bread group, dessert group, vegetable groups, milk group
    b) milk group, bread group, fruits and vegetables group, meat group — 31
    c) fruit group, vegetable group, protein group, snacks group
    d) milk and vegetables group, fruit group, breakfast group, vitamin group

21. This is in salt:
    a) fructose
    b) polysorbate — 32
    c) vitamin B
    d) sodium
    e) bleach

KNOWLEDGE TEST - 6

DO NOT WRITE IN THIS SPACE

22. A food which is high in protein is:

a) rice

b) cholesterol 33

c) chicken

d) cereal

23. In which one of the following are <u>all</u> of the risk factors cannot be changed?

a) high blood pressure, high blood cholesterol, genetics, smoking

b) lack of exercise, sex, race, smoking 34

c) stress, smoking, high blood cholesterol, age

d) genetics, sex, race, age

24. Complex carbohydrates:

a) are hard to understand

b) are kinds of sugars 35

c) make you hungry

d) none of the above

25. Michael doesn't smoke. His girlfriend Jane thinks Michael would look "cute" if he smoked. She offers him a cigarette at a party. To act assertively, Michael should:

a) pretend he didn't hear her and ask her to dance

b) take the cigarette, but just hold it 36

c) tell Jane he doesn't want to smoke to look "cute"

d) none of the above

26. Generally, a food is lower in calories if it is:

a) thin and watery

b) smooth and thick 37

c) rich and gooey

d) all of the above

KNOWLEDGE TEST - 6

DO NOT WRITE IN THIS SPACE

27. Louise is standing in line at the grocery store. A teenage girl behind her lights up a cigarette and the smoke begins to go in Louise's face. To act assertively, Louise could:

a) tell the girl she is inconsiderate

b) move to another line 38

c) put the cigarette out

d) none of the above

28. Myocardial infarction is another name for:

a) heart attack
b) kidney failure 39
c) emphysema
d) cholesterol inadequacy

29. The major advantage of soft impact aerobics dance is:

a) the exercise bout is more fun

b) it reduces the stress on your body

c) it helps protect against heart disease better than other aerobic exercises 40

d) it takes less time to complete than other heart healthy workouts

30. All of the following are benefits of exercise <u>except</u>:

a) builds endurance for other activities

b) reduces LDL in the blood 41

c) reduces the density of your bones

d) increases your lung capacity

31. The muscle group that is most involved in sit-ups is:

a) rectus abdominal

b) quadriceps 42

c) hamstrings

d) pectoralis major

32. Which is a muscle in the lower part of the body?

a) pancreas

b) deltoid 43

c) gastrocnemius

d) dionysus

KNOWLEDGE TEST - 6

DO NOT WRITE IN THIS SPACE

33. During aerobic exercise:

a) oxygen consumption, carbon dioxide output, and blood flow all increase

b) oxygen consumption and blood flow increase but carbon dioxide output decreases 44

c) oxygen consumption and body heat decrease but blood flow increases

d) carbon dioxide output and body heat increase but blood flow decreases

34. A good way to avoid exercise-related injuries is:

a) try to exercise regularly at the same time of day

b) vary the types of heart healthy exercise you do 45

c) don't worry about small aches and pains

d) avoid stretching before a workout

35. A high level of HDL in your blood:

a) is protective against heart disease

b) is associated with obesity 46

c) is a sign that you may have a heart attack soon

d) is what controls your heart rate

36. Which of the following people are most likely to have high levels of HDL in their blood?

a) obese people

b) people who have had heart attacks 47

c) long-distance runners

d) football players

37. The pectorals are:

a) muscles in your upper body

b) organs in your body that help your digestion 48

c) regions in your lungs

d) places where nerve endings meet

KNOWLEDGE TEST - 6

DO NOT WRITE IN THIS SPACE

38. Oxygen is carried to your cells mostly by:
    a) platelets
    b) red blood cells — 49
    c) lymph cells
    d) plasma

39. During hot times of the year, what should you not do in your exercise program?
    a) jog during the morning or evening hours
    b) increase your salt intake — 50
    c) drink more water
    d) wear light clothing

40. A good source of protein is:
    a) butter
    b) rice — 51
    c) meat
    d) vitamin pills

41. A food which is high in protein is:
    a) lettuce
    b) pickles — 52
    c) beans
    d) vitamin pills

42. Which of the following is not a type of sugar?
    a) lactose
    b) maltose — 53
    c) fructose
    d) blactose

43. Pick the best CV snack choice.
    a) corn chips, candy, banana
    b) pickles, unsalted peanuts, potato chips — 54
    c) peanut butter cookies, watermelon, cheese crackers
    d) plain popcorn, peach, raisins

KNOWLEDGE TEST - 6

DO NOT WRITE IN THIS SPACE

44. Which of the following is not a processed food?

a) canned peas
b) Frosted Corn Flake cereal
c) instant grits
d) corn on the cob

55

45. The human heart consists of:

a) 1 chamber
b) 2 chambers
c) 3 chambers
d) 4 chambers

56
(2:21)

46. Knowing how someone else has solved a personal problem:

a) has nothing to do with your problem
b) will always give you the answers to your own problems
c) will cause you confusion
d) may help you understand your problems

57
(5:25)

47. Blood pressure in an adult is considered high if the:

a) diastolic pressure constantly remains above 95
b) systolic pressure is 140
c) radial pulse becomes rapid
d) blood vessel circumference gets larger

58
(3:40)

48. While taking someone's blood pressure, you find the reading is high. You should:

a) tell the person to see his doctor right away
b) take two more blood pressure readings waiting two minutes between each
c) tell him that a screening blood pressure is usually not very accurate
d) advise the person to take vitamin pills

59
(2:40)

KNOWLEDGE TEST - 6

DO NOT WRITE IN THIS SPACE

49. Systolic pressure produced during the heart's contracting phase is:

a) the first blood pressure sound heard

b) written as the lower number of the blood pressure fraction

c) the lower of the two recorded pressures

d) a measure of the heart rate

60
(1:40)

50. A food that has a lot of <u>vitamin C</u> is:

a) a piece of cheese

b) a carrot

c) an orange

d) a peanut

61
(4:32)

51. Which <u>one</u> of the following attacks the germs that enter the body?

a) plasma

b) platelets

c) red blood cells

d) white blood cells

62
(2:15)

52. To get enough protein, we should eat at least two servings each day from the:

a) milk group

b) bread and cereal group

c) meat group

d) fruit and vegetable group

63
(ALL:33)

53. Peer pressure means:

a) that your parents want you to do your best

b) that your teacher praises you for your work

c) that friends want you to be like them

d) that your friends don't care if you act like them

64
(4:24)

DO NOT WRITE IN THIS SPACE

54. Prevention of heart disease should begin in:

a) childhood
b) teens
c) middle-age
d) at the first sign of possible heart problems

65
(1:16)

55. When you first begin to exercise, it is important to:

a) pick an exercise that makes your heart beat faster
b) have a lot of equipment
c) do good warm-up and stretching exercises
d) join with others who are doing the same thing

66
(2:12)

56. Diastolic pressure produced during the heart's relaxation phase is:

a) written as the top number of the blood pressure fraction
b) the same after physical activity
c) the lower number of the blood pressure fraction
d) the movement of the blood vessel as the blood is pumped through it

67
(6:39)

57. Blood pressure is the amount that blood presses against the blood vessel walls. Which <u>one</u> of these statements is <u>true</u>?

a) If the amount of blood decreases a lot, the blood pressure rises.
b) Changes in blood thickness can cause a change in blood pressure.
c) Blood pressure does not change when we exercise.
d) As a blood vessel becomes smaller the blood pressure decreases.

68
(6:17)

<u>6</u>

69